

5.17.05 **ROUNDING-OFF OF NUMBERS**

(a) Scope.

This procedure applies to all specified limits in the specifications. For the purpose of determining conformance with the specifications, an observed or calculated value shall be rounded off to the same place as used in expressing the limiting value, in accordance with the following:

(b) Reference

- (1) AASHTO R-11 Indicating Which Places of Figures Are to be Considered Significant in Specified Limiting Values

(c) Procedure.

- (1) Determine the last significant digit to be retained.

(2) If the figure to the right of the last place to be retained is less than 5, retain the last place as it is.

(3) If the figure to the right of the last place to be retained is greater than 5, increase the last place by 1.

(4) If the figure to the right of the last place to be retained is exactly 5, retain the last place as it is if it is an even number or increase the last place by 1, if it is an odd number.

- (5) Examples: The following table indicates correct rounding-off procedures.

Examples of Rounding-Off

<u>Observed or Calculated Value</u>	<u>Rounded to nearest percent</u>	<u>Rounded Off Value to be used for Purpose of Determining Conformance</u>	<u>Specified Limit</u>	<u>Conform with a Specified Value</u>
56.4	1	56	Nickel	no
56.5	1	56	57% min.	no
56.6	1	57		yes
0.54	0.1	0.5	Sodium	yes
0.55	0.1	0.6	Bicarbonate	no
0.56	0.1	0.6	0.5% max.	no

The rounded-off value should be obtained in one step by direct rounding off of the most precise value available and not in two or more successive roundings. For example, 89,490 rounded off to the nearest 1000 is at once 89,000; it would be incorrect to round off first to the nearest 100, giving 89,500 and then to the nearest 1000 giving 90,000.